**IN THE CLAIMS:**

1. (Currently Amended) A method of encoding a signal, the method comprising the steps of:

providing a respective set of sampled signal values (x(t)) for each of a plurality of sequential segments;

analyzing the sampled signal values (x(t)) to determine one or more sinusoidal components for each of the plurality of sequential segments, each sinusoidal component including a frequency value ($\Omega$) and a phase value ($\Psi$);

linking sinusoidal components across a plurality of sequential segments to provide sinusoidal tracks;

determining, for each sinusoidal track in each of the plurality of sequential segments, a predicted phase value ($\tilde{\psi}(k)$) as a function of phase value for at least a previous segment;

determining, for each sinusoidal track, a measured phase value ($\Psi$) comprising a generally monotonically changing value;

quantizing sinusoidal codes ($C_S$) as a function of the predicted phase value ($\tilde{\psi}(k)$) and the measured phase value ($\Psi$) for the segment where the sinusoidal codes ($C_S$) are quantized in dependence on at least one frequency value ($\Omega$) of the respective sinusoidal track,

wherein, in a first sinusoidal track including a first sinusoidal component with a first frequency value the sinusoidal codes ($C_S$) are quantized using a first quantization accuracy, and in a second sinusoidal track including a second sinusoidal component with a second frequency value higher than the first frequency value, the sinusoidal codes ($C_S$) are quantized using a second quantization accuracy lower than or equal to the first quantization accuracy; and

generating an encoded signal (AS) including sinusoidal codes ($C_S$) representing the frequency and the phase and linking information.

2. (Cancelled)

3. (Previously Presented) The method as claimed in claim 1, wherein the sinusoidal codes ($C_S$) for a track include an initial phase value and an initial frequency value, and the predicting step employs the initial frequency value and the initial phase value to provide a first prediction.

4. (Previously Presented) The method as claimed in claim 1, wherein the phase value of each linked segment is determined as a function of: the integral of the frequency for the previous segment and the frequency of the linked segment; and the phase of a previous segment,
wherein the sinusoidal components include a phase value ($\Psi$) in the range $\{-\pi;\pi\}$.

5. (Previously Presented) The method as claimed in claim 1, wherein the quantizing of the sinusoidal codes includes:

determining a phase difference between each predicted phase value ($\tilde{\psi}(k)$) and the corresponding observed phase value ($\Psi$).

6 (Previously Presented) The method as claimed in claim 4, wherein the generating step comprises:

controlling the quantizing step as a function of the quantized sinusoidal codes ($C_S$).

7. (Previously Presented) The method as claimed in claim 6, wherein the sinusoidal codes ($C_S$) include an indicator of an end of a track.

8. (Previously Presented) The method as claimed in claim 1, wherein the method further comprises the steps of:

synthesizing the sinusoidal components using the sinusoidal codes ($C_S$);

subtracting the synthesized signal values from the sampled signal values ($x(t)$) to provide a set of values ($x_3$) representing a remainder component of the audio signal;

modelling the remainder component of the audio signal by determining parameters, approximating the remainder component; and

including the parameters in an audio stream (AS).

9. (Previously Presented) The method as claimed in claim 1, wherein the sampled signal values ($x_1$) represent an audio signal from which transient components have been removed.

10. (Currently Amended) A method of decoding an audio stream (AS') including sinusoidal codes ($C_S$) representing frequency and phase and linking information, the method comprising the steps of:

receiving a signal including the audio stream (AS');

de-quantizing the sinusoidal codes ($C_S$) thereby obtaining an unwrapped de-quantized phase value ($\hat{\Psi}$), where the sinusoidal codes ($C_S$) are de-quantized in dependence on at least one frequency value~~ of the respective sinusoidal track~~,

wherein in a first sinusoidal track including a first sinusoidal component with a first frequency value the sinusoidal codes are de-quanitzed using a first quantization accuracy, and in a second sinusoidal track including a second sinusoidal component with a second frequency value higher than the first frequency value, the sinusoidal codes are de-quantized using a second quantization accuracy lower than or equal to the first quantization accuracy;

calculating a frequency value ($\hat{\Omega}$) from the de-quantized unwrapped phase values ($\Psi$), and

employing the de-quantized frequency and phase values ($\hat{\Omega}$, $\hat{\Psi}$) to synthesize the sinusoidal components of the audio signal ($y(t)$).

11. (Cancelled)

12. (Previously Presented) The method as claimed in claim 10, wherein the phase value of each linked sinusoidal component is determined as a function of: the integral of the frequency for the previous segment and the frequency of the linked segment; the phase of a previous segment,
and wherein the sinusoidal components include a phase value in the range $\{-\pi;\pi\}$.

13. (Previously Presented) The method as claimed in claim 12, wherein the quantizing accuracy is controlled as a function of the quantized sinusoidal codes.

14. (Currently Amended) An audio encoder arranged to process a respective set of sampled signal values for each of a plurality of sequential segments, the audio encoder comprising;

an analyzer for analyzing the sampled signal values to determine one or more sinusoidal components for each of the plurality of sequential segments, each sinusoidal component including a frequency value and a phase value;

a linker (13) for linking sinusoidal components across a plurality of sequential segments to provide sinusoidal tracks;

a phase unwrapper (44) for determining, for each sinusoidal track in each of the plurality of sequential segments, a predicted phase value ($\tilde{\psi}(k)$) as a function of phase value for at least a previous segment and for determining, for each sinusoidal track, a measured phase value ($\Psi$) comprising a generally monotonically changing value;

a quantizer (50) for quantizing sinusoidal codes as a function of the predicted phase value ($\tilde{\psi}(k)$) and the measured phase value ($\Psi$) for the segment where the sinusoidal codes are quantized in dependence on at least one frequency value of the respective sinusoidal track,

wherein the quantizer (50) is adapted, in a first sinusoidal track including a first sinusoidal component with a first frequency value, to quantize the sinusoidal codes ($C_S$) using a first quantization accuracy, and in a second sinusoidal track including a second sinusoidal component with a second frequency value higher than the first

frequency value, to quantize the sinusoidal codes ($C_S$) using a second quantization accuracy lower than or equal to the first quantization accuracy; and

means (15) for providing an encoded signal including sinusoidal codes ($C_S$) representing the frequency and the phase.

15. (Cancelled)

16. (Currently Amended) An audio player comprising:

means for reading an encoded audio signal including sinusoidal codes representing a frequency and a phase for each track of linked sinusoidal components,

a de-quantizer for generating phase values and for generating frequency values from the phase values,

wherein in a first sinusoidal track including a first sinusoidal component with a first frequency value the sinusoidal codes are de-quanitzed using a first quantization accuracy, and in a second sinusoidal track including a second sinusoidal component with a second frequency value higher than the first frequency value, the sinusoidal codes are de-quantized using a second quantization accuracy lower than or equal to the first quantization accuracy; and

a synthesizer arranged to employ the generated phase and frequency values to synthesize the sinusoidal components of the audio signal.

17. (Previously Presented) An audio system comprising an audio encoder as claimed in claim 14, and an audio player comprising:

means for reading an encoded audio signal including sinusoidal codes representing a frequency and a phase for each track of linked sinusoidal components;

a de-quantizer for generating phase values and for generating frequency values from the phase values; and

a synthesizer arranged to employ the generated phase and frequency values to synthesize the sinusoidal components of the audio signal.

18. (Cancelled)

19. (Currently Amended) A computer readable storage medium ~~on which an audio stream as claimed in claim 18 has been stored~~ including an audio stream comprising sinusoidal codes representing tracks of sinusoidal components linked across a plurality of sequential segments of an audio signal, the codes representing a predicted phase value as a function of phase value for at least a previous segment a measured phase value comprising a generally monotonically changing value, the sinusoidal codes ($C_S$) being quantized as a function of the predicted phase value ($\tilde{\psi}(k)$) and the measured phase value ($\Psi$) for the segment where the sinusoidal codes ($C_S$) are quantized in dependence on at least one frequency value ($\Omega$) of the respective sinusoidal track, wherein in a first sinusoidal track including a first sinusoidal component with a first frequency value the sinusoidal codes are quanitzed using a first quantization accuracy, and in a second sinusoidal track including a second sinusoidal component with a second frequency value higher than the first frequency value, the sinusoidal codes are quantized using a second quantization accuracy lower than or equal to the first quantization accuracy.